

The Future Development of Research in Public Health Departments

CHARLES M. WYLIE, M.D., Dr.P.H.

AS RESEARCH becomes a major function in public health activities, it is useful to examine the reasons for its rapid rise in volume. In doing so, it is helpful to view public health as an underdeveloped area which may advance further only when certain barriers are overcome. These obstacles to progress include a shortage of effective solutions to current health problems and a lack of sound planning for future development. For both of these ailments, increased research may well prove to be the best prescription.

Numerous papers and committee reports have urged the development of research programs in health departments, to meet the need for new knowledge and ideas and to discover better solutions and techniques. Financial support, a serious item some years ago, is now easier to obtain. The path of developing research programs in service agencies is not always smooth, however, and failures occasionally occur.

In reviewing the development of health department research, I have several aims: first, to assess some arguments used in encouraging research; second, to discuss ways of solving problems which agencies commonly face when they include research as a routine activity; third, to survey the field of administrative research, to which service agencies may well give priority; and finally, to review some experiences of research projects in industry that have relevance to health department programs.

Reasons for Research

Few facts are known about the motivation and behavior of research workers. Individuals probably undertake research for many reasons. Primarily, there is a desire to produce new

knowledge and a need to satisfy one's own curiosity. The recent availability of more adequate salaries for investigators in the United States and a desire to raise personal prestige are other encouraging factors.

In a similar vein, we may expect that health agencies will have multiple reasons for initiating research (1). A key argument for beginning the activity is that health departments often face new problems with no known practical solutions. Thus, producing knowledge which can stimulate new programs or improve existing ones may well be the primary goal of studies in health agencies.

The byproducts of research may offer a more immediate attraction to service agencies. It has been suggested, for example, that research may attract more competent personnel into health departments, increase job satisfaction, and reduce turnover (2-4). Other possible benefits are improved standards of performance in service programs and increased prestige for the health department, resulting in more community and professional support (5, 6). Further indirect factors cited are the large volume of unused statistics produced routinely in health agencies, the epidemiologic orientation of personnel, and ready access to population groups (4, 6-8).

Lest we have unduly high expectations of the benefits from research, it may be wise to add some reservations to these arguments. For example, the effect of research on health department personnel may not always be good.

Dr. Wylie is associate professor of public health administration, The Johns Hopkins University School of Hygiene and Public Health, Baltimore, Md.

A number of existing programs have indeed attracted efficient investigators, but the new personnel have seldom provided routine services to health department clients, and it is uncertain how much their contacts with other health workers have raised the quality of the service. Industrial research workers, for instance, rarely mix with regular employees (9). By anticipating this in advance, health officers may reduce the severity of this problem. The experience of one county health department in Florida suggests that this difficulty may be solved effectively; indeed, that it may finally become necessary to reduce contact with service personnel to leave sufficient time for research (10).

Measuring a change in prestige after the introduction of research is not an easy task. Certainly, communities are pleased when health departments attract Federal funds for programs which increase services. Less certain is the reaction to using funds, either Federal or local, for research. Favorable reaction may depend more on the existing prestige of the agency and the persuasive abilities of its personnel.

One must admit that when studies are based on unused statistics the existing data in the files must determine the questions asked by the investigator. While this sometimes allows research to produce rapid results, it also tends to cramp the natural curiosity of the research worker. Thus, the accessibility for study of communities or unused files of information may be weak reasons for advocating research.

Research in service agencies seems easily justified when it is the most practical way to improve services. Public health programs have indeed benefited from research (11). Needing further study, however, is the possibility that by investing the same funds in other ways, such as further training of personnel, one could produce more improvement. In the common situation, when funds cannot be used for other purposes, one may well hold that health agencies should select studies with the greatest potential for improving services.

Practical Problems

The preceding critical comments merely imply that realistic reasons are necessary before undertaking studies, not that research should

be discouraged. Indeed, research programs may well continue to be an increasing activity of a limited number of health agencies. Thus, it seems appropriate to review some of the practical problems that may be encountered when service agencies undertake studies.

Financial problems tend to arrive first. It is probably true that adequate financial backing is readily available for most well-designed research, but if the desire for research is sufficiently great, small-scale studies may be practical without additional financing, either by using working hours more effectively or by working beyond official hours.

A more serious need is for help in designing effective research. The know-how of consultants should be sought early. Personnel with previous experience in research are usually found in the larger health agencies and in educational institutions. To reduce further the scarcity of these consultants, health agencies can make it easier for their own personnel to receive training in research. Doctoral programs in schools of public health and the training programs of some large health agencies provide such experience. If agencies are reluctant to release their most promising personnel for 2 years or more, educational institutions may have to compromise by organizing shorter, continuing educational courses in research techniques, on the premise that a little training is better than none.

If it is decided that research can be usefully added to a service agency, an important early goal of a new program would be to gain acceptance and support in its service-oriented environment. Newly employed research directors sometimes find that while the agency head is enthusiastic about research at least part of the staff is antagonistic. Successful innovations in health departments seem to depend greatly on producing visible, beneficial results as soon as possible. Thus, a reasonable first step is to undertake studies of limited scope rather than to attack the more seductive global ills which may tie up research personnel for years.

A further way to increase support is to have the service personnel suggest troubles to which the research group might give priority. Sometimes, no suggestion proves susceptible to study,

but the investigators may still save the day by selecting related, more researchable questions.

Also complicating the acceptability of research activity is the understandable situation that health personnel, often fond of their own health programs, may become upset when research findings conflict with their opinions. To offset this, the research workers may reasonably involve program administrators from the earliest stages of their studies. Through emotional involvement in the research itself, the administrators may gradually accept the fact that old methods were less perfect than they assumed. Some program administrators may try to influence the research so that the results are less clear and the recommended action less effective than may be desirable. This is a complication to be avoided, but further experience may determine a balanced solution of the situation.

Administrative Research

Public health agencies face some problems that cannot be solved by further basic science or clinical studies. Rather, agencies must give higher priority to studies which evaluate health programs and identify methods of increasing their effectiveness (12, 13). "Administrative research" seems an appropriate term for such studies, where a program or operation is the primary focus of attention and where patients act as rods for measuring effectiveness and identifying failures. Administrative research differs also in its goals, which are to evaluate and to improve the program or operation under study rather than to develop basic knowledge about the disease or the patient.

Administrative research is thus concerned with the way in which public health services are provided and with all factors that bear on providing these services. Human behavior and motivation, economic aspects of disease and its control, administrative decisions and practices, and methods of measuring health problems tend to be included in the scope of administrative research. In planning the future development of a program, one needs information not only about what is currently happening within the program but also about what is happening in the community served by

the program. Thus, in addition to studies of programs, administrative research projects must also be concerned with collecting and interpreting disease statistics for the community.

Few research projects claim to concentrate solely on studies of administrative issues. Nevertheless, as this activity discards its aura of mystery and uniqueness, it seems likely to form a larger segment of public health research (14). Indeed, evaluative studies of existing programs are already common, although corrective action resulting from such studies is less prevalent (12).

Often the findings of current administrative studies apply only to the particular program studied. Yet many health programs have enough common factors that appropriately designed studies should give widely applicable findings. Perhaps the goals of administrative studies should be broadened to include the more universal aspects of program research.

Administrative research has the embarrassing characteristic of raising questions, not only about techniques and programs but also about the competence of those using the methods under study. In fact, it may show that early decisions were made when available information was scanty, while the new investigations merely provide better information for more scientific decisions. Studies in this predicament tend to be quietly filed away without satisfactory answers to the questions raised (15, 16). Perhaps such treatment is an inevitable complication of a number of studies, and other rewards should replace the satisfaction of corrective action or publishing the results.

Lessons From Industry

Some sections of industry have had research programs of long duration. They have faced and occasionally solved problems which are also likely to occur as public health research develops. One gain for health agencies in not being first to innovate is the chance to benefit from the experience, sometimes learned at great cost, of those who went before. Some of the lessons to be gained from industrial experience are briefly reviewed here.

From the available literature on business and

industrial research, it seems only partly true that competition between organizations has caused the development of strong, fruitful research programs. One writer has suggested, for example, that industrial research has been an uncertain investment which has produced satisfying returns mainly in industries that were advancing even before research was intensified (17). Another author has observed that some industries spend relatively little on research when their basic technology is not likely to improve rapidly (18). In public health we have considerable faith that intensified research programs will produce some progress. We may not yet have sufficient experience, however, to be sure that this progress will be fast or slow.

Industry has had difficulty in determining how much to invest in research (19), how best to plan the research program (20), and how to evaluate the results of research (21). Few useful guidelines have emerged, and one would expect at least equal difficulty in doing similar things for research in public health. If management does not clearly establish goals for the research, the program inevitably drifts into studies that fascinate the individual research worker; however, this trend can be controlled (17, 20). Without clear guidance, we may expect that some programs in public health will fit the research personnel better than the needs of the agency. This situation is satisfactory only when the goal is to conduct good research of any kind, but not when the purpose is to create new and better programs.

Industry has had other problems in achieving the best organizational setting and psychological environment for its research workers. We have already touched on the wide gap which often separates research and management personnel, further broadened by the trend to interdisciplinary research (22, 23). Some research divisions consistently depend on management to identify the problems to be studied. As a result, these divisions contribute little to policy making and planning, and follow rather than lead other programs (22). In many other organizations, however, the research director plays an important part in company planning, and his division has high organizational status (24).

As to future possibilities in health departments, we have mentioned the advisability of

having research directors ask service personnel for researchable problems, at least until the research program is well accepted. However, the directors may first have to prove themselves capable of selecting research problems and producing solutions of practical value to the service agency.

In most industries that are organized in divisions, a central research unit exerts functional control over divisional research. Less commonly, the operating divisions do all their own research without central assistance or supervision (24). The current tendency in health departments probably follows the less popular pattern in industry, where a small research staff encourages and helps program personnel to develop their own studies. While this pattern may be less effective in producing good studies, it is obviously more successful in involving service personnel in research. Many advocates of public health research consider this latter goal an important objective of research programs.

Interestingly enough, some industries have shown little interest in administrative research (25), tending to regard reduced costs and increased efficiency as being less important goals than the development of new products (26). Other organizations have made good use of operations research to improve the productivity of men and machines and to automate production lines. Sometimes, extreme competition has forced an interest in administrative research, as was true of the steel industry in the United States (27). Administrative research in industry has concentrated more on man-machine problems than on human behavior, which is more relevant to administrators of health departments. Should administrative research accelerate in the coming decades, public health may well lead industry in this field of endeavor.

Conclusions

Assessment of the progress and problems of research in health departments indicates that expectations of immediate, practical benefits should not be too optimistic. Even if numerous and well fed, our scientific geese must take some time to grow before producing eggs. In the process, we may expect that not all the eggs

will be fresh or golden. Some ways have been suggested for facilitating scientific growth and reducing the distress to a minimum when the eggs are bad.

Health departments have repeatedly shown that research is a feasible and useful addition to their range of activities. When the research program concentrates on the needs that are truly vital to public health, few can advocate that research is an inappropriate activity in service agencies. However, in those health departments where even current techniques are poorly used, the better training of personnel and other measures may well be given higher priority than research.

REFERENCES

- (1) Hardy, A. V.: Research—or stay behind! *Amer J Public Health* 52: 1-7, January 1962.
- (2) Schuman, L. M.: The State health department's role in research. Presented at 5th Seminar on Business Management in Public Health, University of Minnesota, 1958. Mimeographed. Bureau of State Services, Public Health Service, Washington, D.C.
- (3) James, G.: Research by local health department; problems, methods, results. *Amer J Public Health* 48: 353-361, March 1958.
- (4) Godber, G.: The public health department as a research unit. *J Roy Soc Health* 72: 175-177, July-August 1962.
- (5) Hardy, A. V., and Dublin, T. D.: Research in state and local health departments. *JAMA* 165: 1808-1813 (1957).
- (6) Taubenhaus, L. J.: The administration of research by local health departments. *Amer J Public Health* 51: 807-813, June 1961.
- (7) Peterson, P. Q.: Research: Challenge to health departments. *Public Health Rep* 75: 446-449, May 1960.
- (8) Bothwell, P. W.: Conceptual and organizational problems in medical and particularly epidemiologic research. *Public Health* 76: 360-376, June 1962.
- (9) Croome, H.: Human problems of innovation. *Problems of Progress in Industry*. No. 5. Her Majesty's Stationery Office, London, 1960.
- (10) Carter, H. W.: Some observations on the effects of program research in a local health department. *Amer J Public Health* 53: 1818-1824, November 1963.
- (11) James, G.: Program planning and evaluation in a modern city health department. *Amer J Public Health* 51: 1828-1840, December 1961.
- (12) Fleck, A. C., Jr.: Evaluation research programs in public health practice. *In* Research methodology and potential in community health and preventive medicine. L. M. Schuman, consulting editor. *Ann NY Acad Sci* 107: 717-724, May 22, 1963.
- (13) James, G.: The present status and future development of community health research—A critique from the viewpoint of community health agencies. *In* Research methodology and potential in community health and preventive medicine. L. M. Schuman, consulting editor. *Ann NY Acad Sci* 107: 760-770, May 22, 1963.
- (14) Feldstein, M. S.: Operational research and efficiency in the health service. *Lancet* 1: 491-493, Mar. 2, 1963.
- (15) Eaton, J. W.: Symbolic and substantive evaluative research. *Admin Sci Quart* 6: 421-442, March 1962.
- (16) New, P. K.: The hospital researcher walks a tightrope. *Mod Hosp* 93: 93-95, August 1959.
- (17) Drucker, P. F.: Twelve fables of research management. *Harvard Bus Rev* 41: 103-108, January-February 1963.
- (18) Brozen, Y.: A reply. *J Business* 35: 212-216, April 1962.
- (19) Quinn, J. B.: Control of research and development costs. *J Accountancy* 110: 51-58, October 1960.
- (20) Quinn, J. B.: Long-range planning of industrial research. *Harvard Bus Rev* 39: 88-102, July-August 1961.
- (21) Quinn, J. B.: How to evaluate research output. *Harvard Bus Rev* 38: 69-80, March-April 1960.
- (22) Newman, J. W.: Put research into marketing decisions. *Harvard Bus Rev* 40: 105-112, March-April 1962.
- (23) Quinn, J. B., and Mueller, J. A.: Transferring research results to operations. *Harvard Bus Rev* 41: 49-66, January-February 1963.
- (24) Janger, A. R.: Organizing the corporate research function. *Management Record* 22: 2-8, December 1960.
- (25) Hyman, S.: Research into management. *Nature* 196: 221-222, Oct. 20, 1962.
- (26) Gustafson, W. E.: Research and development, new products, and productivity change. *Amer Econ Rev* 52: 177-185, May 1962.
- (27) Klein, H. E.: The cultural lag in manufacturing. *Dun's Rev Mod Ind* 82: 37-41, August 1963.